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EXAMINER

AHMED, S

ART UNIT

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3

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<b>Office Action Summary</b>	Application No. 09/350,060	Applicant(s) <b>Chapman</b>
	Examiner <b>Sheeba Ahmed</b>	Group Art Unit <b>1773</b>

- Responsive to communication(s) filed on \_\_\_\_\_
- This action is **FINAL**.
- Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle* 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claim

- Claim(s) 1-30 is/are pending in the application.
- Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- Claim(s) \_\_\_\_\_ is/are allowed.
- Claim(s) 1-30 is/are rejected.
- Claim(s) \_\_\_\_\_ is/are objected to.
- Claims \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

- See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.
- The specification is objected to by the Examiner.
- The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- All  Some\*  None of the CERTIFIED copies of the priority documents have been
- received.
  - received in Application No. (Series Code/Serial Number) \_\_\_\_\_
  - received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \*Certified copies not received: \_\_\_\_\_
- Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- Notice of References Cited, PTO-892
- Information Disclosure Statement(s), PTO-1449, Paper No(s). 2
- Interview Summary, PTO-413
- Notice of Draftsperson's Patent Drawing Review, PTO-948
- Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1-3, 5-8, 13-20, 23, 24, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stokes et al. (US 5,660,928) in view of Alexander et al. (US 3,007,878).

Stokes et al. disclose a coated substrate for use in ink jet printing (*equivalent to the recording medium of the claimed invention*) (Column 1, lines 5-10). The coated substrate has a first layer of a film or a nonwoven web (*equivalent to the substrate of the claimed invention*) and a second layer overlying the first layer and comprising a latex binder, 25 to 65 weight % hydrophilic silica (*since the silica is not soluble, the Examiner takes the position that the composition of the second layer must have a solids content of at least 20% by weight*) and a water soluble viscosity modifier (Column 2, lines 17-30). Examples of the latex binder include polyvinyl acetate (*equivalent to the non-ionic latex polymer of the claimed invention*) (Column 3, lines 14-25), the hydrophilic silica has a pore volume of about 1 to about 2 cc/g (*equivalent to the porous inorganic oxide of the claimed invention*) (Column 3, lines 43-46) and the water soluble viscosity modifier may be a polyacrylamide (*equivalent to the water soluble*

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*polymer of the claimed invention)* (Column 4, lines 7-13). Stokes et al. disclose the claimed invention but do not specifically state that the inorganic oxide possesses a cationic charge. However, Alexander et al. disclose colloidal, positively charged particles of a silica core coated with an aluminum oxide (Column 1, lines 11-15 and Column 3, lines 45-50) which are used in coating compositions. Accordingly, it would have been obvious to one having ordinary skill in the art to replace the silica particles disclosed by Stokes et al. with the colloidal, positively charged particles of silica coated with an aluminum oxide given that use of such charged particles in coatings leads to better adhesion. With regards to the viscosity limitation, the Examiner takes the position that the composition of the second layer disclosed by Stokes et al. must have the claimed viscosity given that the chemical composition and the amount of each component in the composition disclosed by Stokes et al. and that of the claimed invention are identical. Furthermore, the Examiner takes the position that it would have been obvious to one having ordinary skill in the art to have determined the optimum weight ratio of the nonionic latex to polyvinyl alcohol through routine experimentation in the absence of a showing of criticality in the claimed ratio.

2. Claims 10-12, 21, 22, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stokes et al. (US 5,660,928) in view of Alexander et al. (US 3,007,878) and Williams et al. (US 5,494,759).

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Stokes et al. and Alexander et al., as discussed above, disclose the claimed invention but do not specifically state that coating comprises a cationic polymer. However, Williams et al. disclose a coating composition for preparing an ink receiving layer for a printing material (Column 1, lines 6-9). The printing material comprises a support substrate and an ink receiving layer applied to the support and containing a polyvinyl alcohol and/or a vinyl acetate homopolymer and a quaternary ammonium compound (Column 2, lines 19-23). The quaternary ammonium salt is preferably polydiallyldimethylammonium chloride (Column 2, lines 40-41). The ink receiving layer may contain inorganic pigments having a pore volume of about 1.0 to 2.5 ml/g wherein the amount of pigment is 15 to 80 wt.% of the ink receiving layer (Column 2, lines 49-55). The coating weight of the ink receiving layer when applied to the substrate is 0.5 to 15 g/m<sup>2</sup> (Column 2, lines 58-61). The substrate may be paper or a synthetic resin (Column 2, lines 62-67). Accordingly, it would have been obvious to one having ordinary skill in the art to add a cationic polymer to the coatings disclosed by Stokes et al. and Alexander et al. and to apply the coating to the substrate at a coating weight of 0.5 to 15 g/m<sup>2</sup> given that Williams et al. specifically teach that doing so leads to good water fastness and wet rub off properties in addition to a high color density, high image definition and high clarity.

3. Claims 1-3, 5-10, and 13-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (EP 0586846B1).

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Abe et al. disclose an ink jet recording sheet (*equivalent to the recording medium of the claimed invention*) comprising a support (*equivalent to the substrate of the claimed invention*) and an ink receiving layer coating (*equivalent to the coating composition of the claimed invention*) containing a cation-modified silica (Page 1, lines 57-58). The cation-modified silica is coated with a metal oxide such as aluminum oxide (*equivalent to the inorganic oxide of the claimed invention*) (*the Examiner takes the position that the silica disclosed by Abe et al. must have the claimed pore volume given that the chemical composition and the structure of the silica disclosed by Abe et al. and that of the claimed invention are identical*). The ink receiving layer contains various polymers such as polyvinyl alcohol (*equivalent to the water soluble polymer of the claimed invention*) and polyvinyl acetate (*equivalent to the latex polymer of the claimed invention*) used in combination with a cationic polymeric surfactant (*equivalent to the cationic polymer of the claimed invention*) (Page 2). Abe et al. disclose the claimed invention but do not specifically state that the coating composition has a solids content of at least 20% by weight, a coating weight of 5 to 10 g/m<sup>2</sup>, a volume fraction of 0.25 to 0.5, or a weight ratio of the polyvinyl acetate to the polyvinyl alcohol in the range of 0.2 to 5.0. However, the Examiner takes the position that it would have been obvious to one having ordinary skill in the art to have determined the optimum solids content, the optimum coating weight, the optimum volume fraction and the optimum weight ratio of the nonionic latex to polyvinyl alcohol through routine experimentation in the absence of a showing of criticality. With regards to the viscosity limitation, the Examiner takes the position that the composition of the second layer disclosed by Abe et al. must have the

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claimed viscosity given that the chemical composition and the amount of each component in the composition disclosed by Abe et al. and that of the claimed invention are identical.

4. Claims 1-3, 8-16, and 20-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch et al. (DE19534327A1).

Koch et al. disclose a cationically adjusted coating for inkjet paper (*equivalent to the recording medium of the claimed invention*) that contains at least one pigment, at least one binder and a cationic dispersant system. The coating has a solids content of 20 to 70% by weight, a viscosity of 100 to 1000 MPa.s and an inorganic pigment having a cationic charge (*equivalent to the inorganic oxide of the claimed invention*) and a pore volume of 0.1 to 0.9 ml/g (Page 8 of the Translation provided in the IDS). The cationic dispersant is a quaternary ammonium compound such as polydiallyldimethyl ammonium chloride (*equivalent to the cationic polymer of the claimed invention*) (Page 11). The binder may be polyvinyl acetate (*equivalent to the non-ionic latex of the claimed invention*) and the coating can further contain a water retention agent such as polyvinyl alcohol (*equivalent to the water soluble polymer of the claimed invention*) (Page 12). The coating may be applied to a paper (*equivalent to the support of the claimed invention*). Koch et al. disclose the claimed invention but do not specifically state that the coating has a viscosity of 5000 centipoise or less , a coating weight of 5 to 10 g/m<sup>2</sup>, a volume fraction of 0.25 to 0.5, or a weight ratio of the polyvinyl acetate to the polyvinyl alcohol in the range of 0.2 to 5.0. However, the Examiner takes the position that it would have been obvious to

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one having ordinary skill in the art to have determined the optimum viscosity, the optimum coating weight, the optimum volume fraction and the optimum weight ratio of the nonionic latex to polyvinyl alcohol through routine experimentation in the absence of a showing of criticality.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stokes et al. (US 5,660,928) in view of Alexander et al. (US 3,007,878) and Vassiliades et al. (US 4,115,474).

Stokes et al. and Alexander et al., as discussed above, disclose the claimed invention but do not specifically state that the polyvinyl acetate is enclosed in a polyvinyl alcohol shell. However, Vassiliades et al. disclose microcapsules comprising a polymeric shell of polyvinyl alcohol encapsulating a polymeric core (Column 2, lines 11-20, 67-68 and Column 3, lines 22-25). Accordingly, it would have been obvious to one having ordinary skill in the art to add a polyvinyl alcohol shell to the polyvinyl acetate disclosed by Stokes et al. given that Vassiliades et al. specifically state that doing so is desirable to bond a nonadherent polymer to a cellulosic substrate.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (EP 0586846B1) in view of Vassiliades et al. (US 4,115,474).

Abe et al., as discussed above, disclose the claimed invention but do not specifically state that the polyvinyl acetate is enclosed in a polyvinyl alcohol shell. However, Vassiliades et al. disclose microcapsules comprising a polymeric shell of polyvinyl alcohol encapsulating a

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polymeric core (Column 2, lines 11-20, 67-68 and Column 3, lines 22-25). Accordingly, it would have been obvious to one having ordinary skill in the art to add a polyvinyl alcohol shell to the polyvinyl acetate disclosed by Abe et al. given that Vassiliades et al. specifically state that doing so is desirable to bond a nonadherent polymer to a cellulosic substrate.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koch et al. (DE19534327A1) in view of Vassiliades et al. (US 4,115,474).

Koch et al., as discussed above, disclose the claimed invention but do not specifically state that the polyvinyl acetate is enclosed in a polyvinyl alcohol shell. However, Vassiliades et al. disclose microcapsules comprising a polymeric shell of polyvinyl alcohol encapsulating a polymeric core (Column 2, lines 11-20, 67-68 and Column 3, lines 22-25). Accordingly, it would have been obvious to one having ordinary skill in the art to add a polyvinyl alcohol shell to the polyvinyl acetate disclosed by Koch et al. given that Vassiliades et al. specifically state that doing so is desirable to bond a nonadherent polymer to a cellulosic substrate.

### *Conclusion*

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Sheeba Ahmed whose telephone number is (703) 305-0594. The Examiner can normally be reached on Monday-Friday from 8am to 5pm.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Paul Thibodeau, can be reached at (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-5436.

Sheeba Ahmed  
September 14, 2000

Paul Thibodeau  
Supervisory Patent Examiner  
Technology Center 1700